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THE PROGRESS OF SCIENCE

WILLIAM CRAWFORD GORGAS

THE suppression of yellow fever, malaria and dysentery in the Panama Canal Zone is one of the triumphs of modern medicine, and General Gorgas, under whose direction the work was accomplished, symbolises more completely perhaps than any one else the control of disease by science and the applications of pathology. The war had one mitigation in that the death rate from disease was lowered to an extraordinary extent, and here again General Gorgas, as the surgeon general of the United States Army, represents this great achievement. He thus attained worldwide recognition and his death in London on his way to Africa is a cause of general regret.

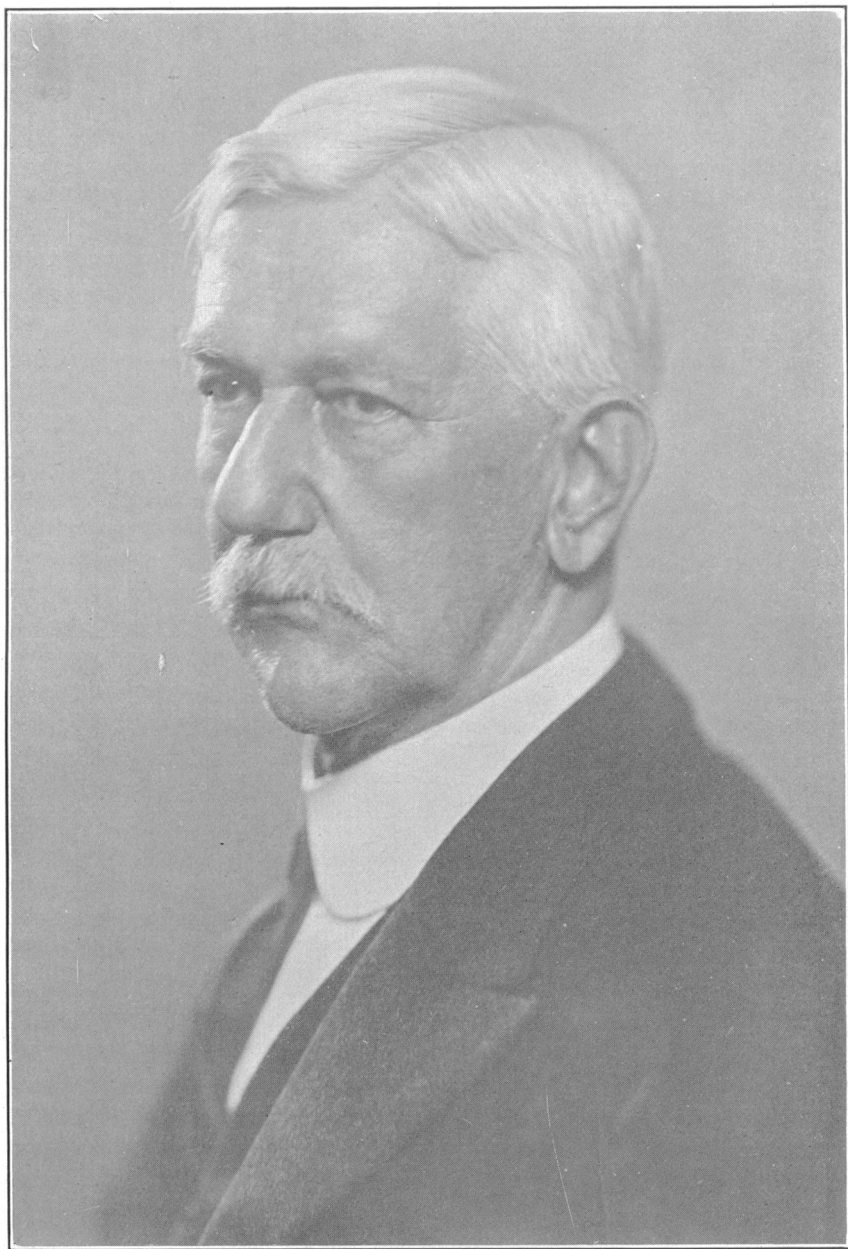
Gorgas, born in Mobile, Alabama, in 1854, came from one of the historic families of the South. His grandfather was governor of Alabama, and his father, General Josiah Gorgas, was one of the West Point trained officers of the Confederate Army. He was graduated from the University of the South and from the Bellevue Hospital Medical College, and became an army surgeon in 1880. He saw service in Florida, in the West and on the Mexican border, and had risen to the rank of major in 1898, when he was with the expedition against Santiago. Thence he was sent to Havana to be the chief sanitary officer of that city during the American occupation.

Cuba was a center of yellow fever and Dr. Carlos Finlay of Havana had proposed the theory that mosquitos were the carriers. The truth of this theory was proved and many

of the conditions of infection determined by the American Army Commission, consisting of Reed, Carroll, Agramonti and Lazear. Immediately following this investigation and based upon its scientific findings, Gorgas succeeded in practically eliminating yellow fever in Havana and throughout the island.

Congress, in recognition of this work, in 1903, by special act made him colonel and assistant surgeon general, and then, a year later, he was sent to Panama, becoming chief sanitary officer of the Canal Zone, in 1904, and a member of the Canal Commission in 1907. In the days of the old French company, which attempted to build the Panama Canal, tropical diseases annually claimed one fourth of all its workers. The French were powerless before this pestilence. When Gorgas became general sanitary officer of the Canal Commission the annual death toll had been reduced, but it was still difficult to obtain the vast army of workmen necessary and to care for those disabled by malaria, yellow fever and dysentery. In nine years, by a systematic campaign for the destruction of the mosquito as the carrying agent of disease, and by other sanitary measures, Gorgas virtually drove these diseases from the Isthmus. When he gave up the work, deaths among the Canal workers had been reduced to five per thousand annually.

While in the Canal Zone, Gorgas visited Guayaquil and mapped out a plan to rid that city, long known as the "pesthole of the Pacific," from the yellow fever scourge, and his plan was in process of execution when the war began. In the winter



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GENERAL WILLIAM CRAWFORD GORGAS



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DR. RAPHAEL PUMPELLY, THE GEOLOGIST AND EXPLORER, WITH DR. W. B. SCOTT (ON THE LEFT), PROFESSOR OF GEOLOGY AND PALEONTOLOGY AT PRINCETON, AT THE TIME THE DEGREE OF DOCTOR OF LAWS WAS CONFERRED ON DR. PUMPELLY BY PRINCETON UNIVERSITY.

of 1913, he went to South Africa, at the invitation of the Chamber of Mines of Johannesburg, to investigate the high death rate from pneumonia among the natives working in the mines of the Rand. By applying the army methods of increasing the air space of sleeping quarters the death rate was materially lowered.

Gorgas was appointed surgeon general of the U. S. Army on January 16, 1914, and was given the rank of major general in 1915. In 1916, he spent several months in South America in making a preliminary survey of localities still infested with yellow fever, the "endemic foci" of disease, for the Rockefeller Foundation. Upon his retirement from active duty in the Army in the fall of 1918, he resumed this work and had just started upon an investigation of the African foci at the time of his death.

THE SUPPLY OF PLATINUM

THE London *Times* discusses the world's supply of platinum limited by the demands of war and the failure of the Russian mines. Since this metal was described and named as new in 1750 by an English physicist, Sir William Watson, its singular properties have led to a continuously increasing demand. It is slightly heavier than gold, and, like gold, is very ductile and malleable. It resists all acids except *aqua regia*, and mixtures generating chlorine. Very large quantities of it are used in modern dentistry, and during the war munition factories absorbed all that could be obtained. The jeweller prefers it to gold or silver as a setting for precious stones, and it is a component of many of the most costly examples of his art. The chemist in his laboratory requires it for ladles and beakers, for retorts and crucibles. Makers of incandescent lamps, electricians, and scien-

tific instrument makers all require it. Platinum has the curious property of absorbing large quantities of hydrogen and other gases, which in this occluded condition display a special activity. It is therefore employed in chemical industry as a catalyzer, that is to say, as an agent which excites chemical changes into which it does not itself enter. Even before the war, the relatively limited supply of the metal was unequal to the demand. The price rose rapidly. A dozen years ago platinum was 20 per cent. more valuable than gold. In 1914 it was more than twice the price of gold. In 1918 an ounce was worth five ounces of gold. After the armistice there was a slight fall, probably due to the liberation of supplies that had been withheld, but now, although gold itself has appreciated, platinum has eight times the value of gold. There is a possibility that new sources may be discovered, because it has a wide distribution usually in association with auriferous deposits. There are traces of it in the sands of the Rhine, in Lapland, Norway, and near Wicklow, in Ireland. It occurs in appreciable quantities in Honduras, Columbia, Brazil, Mexico, the United States, and British Columbia. It has been found in Borneo, Australasia, the Transvaal, Madagascar. But 90 per cent. of the world's production used to come from the Ural Mountains, where it is relatively abundant, and so easily worked that other sources have not yet been seriously exploited. In the early years of last century over a million three-rouble pieces were minted, then worth about ten shillings; now, if they could be found, worth at least £12. Efforts are being made to increase the production in Colombia; but, if Russia ever gets to work again, she will find that her platinum deposits are worth many gold-mines.